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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,782	10/17/2003	Harald W. Sontheimer	2006636-0064	7705
24280 7590 04/21/2008 CHOATE, HALL & STEWART LLP TWO INTERNATIONAL PLACE BOSTON, MA 02110				
EXAMINER				
CHEN, SHIN LIN				
ART UNIT		PAPER NUMBER		
1632				
NOTIFICATION DATE		DELIVERY MODE		
04/21/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdoCKET@choate.com

### Office Action Summary

**Application No.**

10/686,782

**Applicant(s)**

SONTHEIMER ET AL.

**Examiner**

Shin-Lin Chen

**Art Unit**

1632

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 15-20 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 15-20 and 22-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicants' amendment filed on 1-24-08 has been entered. Claims 1, 16 and 29 have been amended. Claim 25 has been canceled. Claims 1, 15-20 and 22-24 are pending and under consideration.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 15-20 and 22-24 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for delivering chlorotoxin fused to a cytotoxic moiety to neuroectodermal tumors in vitro or via intravenous administration or intracavity injection of brain in vivo, does not reasonably provide enablement for delivering a cytotoxic moiety to a neuroectodermal tumor in vivo by administering a pharmaceutical composition comprising a chlorotoxin fused to a cytotoxic moiety to an individual via various administration routes. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims and is repeated for the reasons set forth in the preceding Official action mailed on 12-31-07. Applicant's arguments filed 1-24-08 have been fully considered but they are not persuasive.

Applicants cite US Patents 5,905,027 and 6,667,156, which are parent applications of instant invention, and argue that example 17 of US Patent 5,905,027 shows injection of <sup>131</sup>I-TM-601 into cerebellum of a mouse result in tumor-selective uptake of <sup>131</sup>I-TM-601. Example 23

shows treating glioma cells with a chlorotoxin-GST fusion protein attached to saporin results in significant killing of the glioma cells. Applicants further cite declaration by Dr. Alison O'Neill and argue that intracranial and intravenous administration of chlorotoxin results in selective uptake in glioma and metastatic melanoma (amendment, p. 5-6). This is not found persuasive because of the reasons set forth in the preceding Official action mailed on 12-31-07. The claims encompass delivering a cytotoxic moiety to various neuroectodermal tumors, including ependymomas, medulloblastomas, neuroblastomas, gliomas, gangliomas, pheochromocytomas, melanomas, small cell lung carcinoma, Ewing's sarcoma, and metastatic tumors in the brain, in vivo by administering a composition comprising a chlorotoxin fused to any cytotoxic moiety via various administration routes. The specification fails to provide adequate guidance and evidence for how to deliver various cytotoxic moieties to various neuroectodermal tumors in vivo via various administration routes, including intraperitoneal, oral, topical, intramuscular, intrathecal and subcutaneous administration etc. Example 17 shows direct injection into cerebellum and example 23 shows in vitro administration of chlorotoxin. Declaration of Dr. O'Neill shows intracranial and intravenous administration of chlorotoxin. There is no evidence of record that demonstrates delivery of a cytotoxic moiety to various neuroectodermal tumors in vivo via various administration routes, including intraperitoneal, oral, topical, intramuscular, intrathecal and subcutaneous administration etc. The art of delivering a protein complex to various target sites in vivo was unpredictable at the time of the invention. Thus, one skilled in the art at the time of the invention would require undue experimentation to practice over the full scope of the invention claimed.

***Conclusion***

No claim is allowed.

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shin-Lin Chen whose telephone number is (571) 272-0726. The examiner can normally be reached on Monday to Friday from 9:30 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras can be reached on (571) 272-4517. The fax phone number for this group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Art Unit: 1632

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Shin-Lin Chen, Ph.D.  
/Shin-Lin Chen/

Primary Examiner, Art Unit 1632